

Electrical Safety and Tag-Out Program

LG #7

A. Part I: Electrical Safety-- Background

Shipboard Electrical Systems

- Are ungrounded
- Ungrounded systems critical to shipboard reliability
- Risk of electrical shock higher than work ashore

Electrical Safety Elements

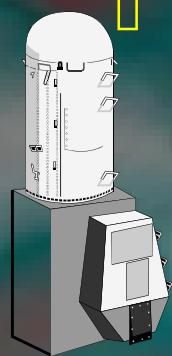
- Working on de-energized equipment
- Working on energized equipment
- Personal protective equipment
- Portable electrical tool issue

Electrical Safety Elements

- General precautions for portable electrical equipment
- Training
- Safety standards implementation

Equipment Classification

- Portable electrical equipment
 - ⇒ Hand held while energized
- Mobile electrical equipment
 - Stationary while energized, not hardwired
 - Energized >50% of the time
- Stationary equipment
 - Hardwired to ship's electrical system



1. Command Responsibilities

Responsibilities

- **Commanding Officer**
 - ⇒ Authorizes all work on energized equipment
- **Safety Officer**
 - Ensures electrical/electronic indoctrination training provided and completed for all newly reporting personnel



Responsibilities

- **Electrical Officer/Electronic Maintenance Officer**
 - Establish electrical tool issue room
 - Ensure all maintenance and repair conducted
 - Ensure on-board CPR instructor certified
- **Supply Officer**
 - Ensure all electrical tools/equipment received are turned over to electrical tool issue for inspection prior to use

Responsibilities

Division Officers

- Ensure assigned personnel are trained
- Ensure portable equipment visually inspected & safety checked quarterly
- Ensure personal equipment authorized for shipboard use

Responsibilities

Division Officers

- Ensure required personnel receive CPR training
- Ensure items open purchased or received from Navy supply are safety checked prior to use
- Ensure all personnel experiencing electrical shock report to medical

Responsibilities

□ All Hands

- Request permission to bring aboard personal electronic equipment
 - Does not apply to battery-operated equipment
- Report unsafe material or equipment
- Report electrical shock to division officer

2. Command Tool Issue Procedures

Portable Electrical Tool Issue

- **Centralized tool issue room required**
- **Personnel issuing tools perform visual inspection & quarterly safety testing prior to issue**
- **Prior to issue**
 - ⇒ **Tool users briefed on general electrical precautions**
 - **Required PPE issued with tool**

Portable Electrical Tool Issue

- Certain divisions/work centers may retain tools permanently
 - ⇒ Will perform required checks on equipment
 - Won't issue tools to other work centers
- Unsafe tools marked "OOC" & rendered incapable of being energized
- Housekeeping items not required to be retained in tool issue

Electrical Safety Rubber

- Provide insulation between hands & equipment
- Leather outer shell used to prevent rubber from tearing
- PMS required before every use



Electrical Safety Rubber

- DO NOT use electrical **Gloves** to handle chemicals, solvents, or other hazardous material
 - Degrades rubber, reduces protection value
- DO NOT use chemical protective **gloves** for electrical shock protection
 - Gloves labeled on cuff saying not meant for electrical work



3. General Electrical Safety

Precautions

General Precautions

- **Obey all warning signs, tags, and read operating instructions BEFORE using equipment**
- **NEVER work on energized equipment without CO's approval**
- **NEVER remove Danger or Caution tags, or energize equipment with tags until instructions read and thoroughly understood**

General Precautions

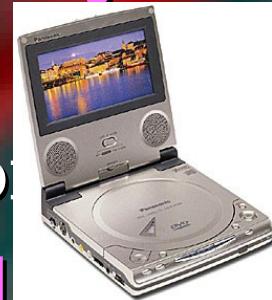
□ Electrical cords

- Always inspect for unsatisfactory condition(s)
- Do not join more than two 25 ft extension cords together
- Connect equipment cord to extension cord before inserting plug into receptacle
- Never pick up a tool by its cord
- Never allow cord to be a tripping hazard, or put in position of becoming frayed



Personal Electrical and Electronic Equipment

- Must be authorized and safety checked
 - ⇒ Checks performed every 6 months
- Request form must be filled out
- Some items prohibited
 - Fans, lamps, heating pads, hot plates, heaters, etc.



4. Electric Shock First Aid and CPR

Rescuing Shock Victims

- Shut the voltage off BEFORE trying to give first aid or touch the victim
- If voltage can't be turned off, DO NOT touch victim until removed from conductor



Rescuing Shock Victims

- To remove victim from live conductor, use something NONCONDUCTIVE:
 - Board
 - Belt
 - Dry clothing
- Call for medical assistance
- Administer CPR if necessary
- All electric/electronic ratings must receive CPR training



B. Part II: Tag-Out Program

1. Background

Purpose

- Provide method of preventing the operation of component, equipment, system when isolated or in abnormal condition
- Tags applied to valves, switches, or other operating devices to indicate restrictions (if any)

Purpose

- Tags used to indicate equipment status or condition (e.g. unreliability)
- PMS Maintenance Requirement Cards (MRC) may indicate tag-out requirements as part of maintenance action.

Equipment Tag-Out Bill

- Standardized procedures in OPNAVINST 3120.32 (series)
- Each ship must have tag-out bill or instruction and be in compliance

Tag-Out Elements

- Establishes tag-out log
- Assigns Authorizing Officer
- Designates use of tags, labels, forms
- Requires program audits & checks
- Requires training of all hands and program users

2. Responsibilities

Commanding Officer

- Designates the Authorizing Officer
 - ⇒ By billet or watch station
- May designate on-scene Authorizing Officer
 - For repetitive tag-outs associated with specific iterative tests or maintenance jobs



Authorizing Officer

- Must be qualified and trained in tag-out program and procedures
- Ensures people assigned to make a tag-out are qualified and knowledgeable

3. Types of Tags

Danger Tag

- Red tag & string to attach to equipment
- Prohibits operation of equipment that could jeopardize personnel safety or damage equipment
- Under NO CIRCUMSTANCES will anyone operate equipment or remove tag except with authorization of assigned individuals

DANGER
DO NOT OPERATE
OPERATION OF THIS EQUIPMENT WILL ENDANGER
PERSONNEL OR HARM THE EQUIPMENT. THIS
EQUIPMENT SHALL NOT BE OPERATED UNTIL THIS
TAG HAS BEEN REMOVED BY AN AUTHORIZED
PERSON.

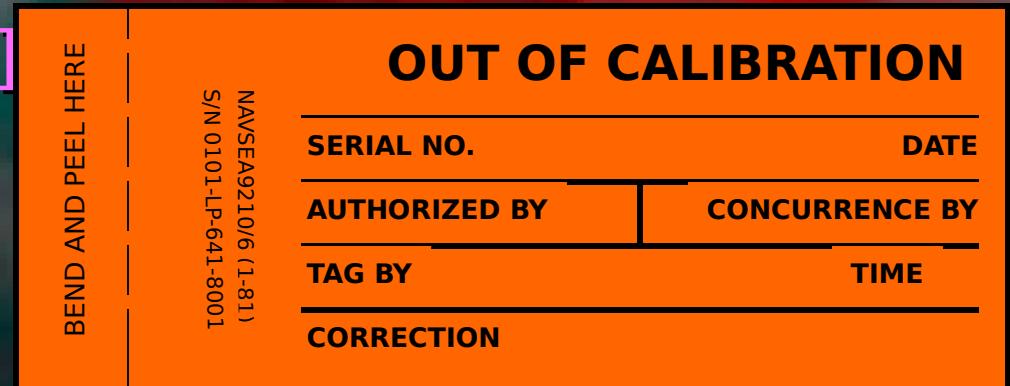
Caution Tag

- Yellow tag & string to attach to equipment
- Precautionary--provides temporary special instructions for operation of equipment
- Not used if equipment

| | | |
|--|---|----------------------------------|
| SERIAL NO. | SYSTEM/COMPONENT IDENTIFICATION | DATE/TIME |
| | SIGNATURE OF PERSON ATTACHING TAG | SIGNATURE OF PERSON CHECKING TAG |
| CAUTION | | |
| DO NOT OPERATE THIS EQUIPMENT UNTIL SPECIAL INSTRUCTIONS ON REVERSE SIDE ARE THOROUGHLY UNDERSTOOD | | |
| SIGNATURE OF AUTHORIZING OFFICER | SIGNATURE OF REPAIR ACTIVITY REPRESENTATIVE | |
| NAVSHIPS 9890/5 (REV.3-70)(FRONT) | | |
| S/N 0103-1f-641-3001 | | |

Out of Calibration Label

- Orange peel & stick label
- Indicates inaccurate instrument
- Instrument may be used with extreme caution
- May also indicate correction necessary for]



Out of Commission Label

- Red peel & stick label
- Identifies instruments which incorrectly indicates parameters because of defects or are isolated from the system
- Indicates unreliable instrument--must be:
 - ⇒ Repaired
 - ⇒ Reconnected
 - Recalibrated

| | |
|--|--|
| OUT OF COMMISSION | |
| BEND AND PEEL HERE | SERIAL NO. _____ DATE _____ |
| NAVSHIPS 9890/7 (REV. 3-70) FORMERLY NAVSHPS 8001 S/N 0101-LP-641-8001 | AUTHORIZED BY _____ CONCURRENCE BY _____ |
| TAG BY _____ TIME _____ | |

4. General Tag-Out Rules

All Hands

- Only authorized & qualified personnel shall sign, hang, remove tags
- Personnel shall NEVER operate or energize tagged-out equipment unless authorized by CO
- Personnel shall report any equipment--if energized--that may cause injury or material damage & should be tagged out

Authorized Personnel

- Shall receive detailed training in tag-out procedures
 - ⇒ Detailed training accomplished annually
- Shall demonstrate
 - Thorough knowledge of tag-out procedures
 - Use of tag-out log
 - Procedures for clearing tags

